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IT Based Vehicle Tracking System for Effective Management in Public Organizations

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Abstract

With today's changing public management approach, it's intended for public institutions to offer more efficient and effective services with a lower cost. In this study, the extent of performance improvement has been revealed in accordance with the determined performance criteria using transportation services information technologies in public institutions. The institution's current performance was evaluated. It became evident that public institution's needed an information system to keep vehicle fleets under control. The impact of the vehicle management application was repeated using the performance assessment made above. It was determined there was a minimum of 25% decrease in vehicles cost and expenses.

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1. Introduction

In recent years the search for an effective and efficient government approach has led to the questioning of how public institutions are run. The assessment that government operations are slow and resource usage is inefficient has revealed the necessity of a transformation within public administration. In accordance with the transformation of public administration in recent years, information technology (IT) has been used in order for public resources to be used efficiently, effectively and economically in line with intended purposes. There are many studies related to information technology (IT) use in the public sector by Bilgin (2004), Cevik (2008), Ates (2007) & Kurnaz (2007).

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However, in literature there are no sufficient studies related to the measuring of performance impact and IT use in public institutions. In this concept, this study is considered to be an opportunity for new research. In the last 25 years, along with the increase of population the public sector has grown rapidly. While the ratio of public expenditure to GDP was 18% in 1980, this ratio increased to 28% in 2013 by IIA Report (2012). Expenditures on information technology have increased at the same rate as public expenditures. According to IHS Global Insight's 2011 study, while the ratio of IT expenditure to the total public expenditure is 2.7% in the USA -the leader of IT investments- this ratio is 0.4% in our country by IIA Report (2012). Therefore, the need for decision makers to measure whether large IT disbursements contribute to the improvement of public institution's performances has arisen.

IT plays an import role in the enhancement of efficiency and effectiveness in public administration in various ways by NASCIO (2006) & NASCIO (2007). Firstly IT, automates tasks that need manual and intensive labor, procurement and human resources management. The further extensive use of current assets of automation public institution's and human resources that come along with the spreading of IT helps protect the expenditure a significant amount. Secondly, IT provides various information regarding public personnel and citizens public administration. In this context, there are very few experimental studies related to revealing the value of IT or the approval of arguments in public institutions by Pang et al. (2011).

Improvements of current indicators recovered by performance evaluations made within the institution are among the primary objectives of the organization. Within this scope, methods such as quality management, development of human resources, following and implementing new technologies, improving team work, good governance, and executive precaution can be mentioned in relation to performance enhancement by Holzer and Yang (2004). With developing technology making management operations more complex, the use of new technological possibilities that will provide an effective service with information systems will be inevitable. Besides this, in recent years new technologies have started to be used effectively through qualified personnel employment. Consequently, the reconfiguration of public institution information technologies has introduced the concept of public administration in accordance with social and technological developments beyond classic bureaucracy by Yildirim (2010). The aim within the context of this study was to insure an increase in the performance values within the institution in the scope of following new technology and application.

In recent year's innovations in the area of technology can be summarized under three main headings: mobile applications, the growth of online software as a service and cloud computing services by Laudon and Laudon (2010). Day by day more businesses are carrying their software from PC or desktop computers to online environments. Public institutions have made significant progress regarding the use of this online software. One of the complicated management operations that stand out is monitoring and management of public institution vehicles. The increase in the number of vehicles and costs in the recent years has shown that in terms of large-scale organizations, having an effective vehicle tracking and management information system in order for vehicles to be used more efficiently is of vital importance. When analyzing literature there are many studies in the field of the use of information technologies in public institutions. In this context, the effects of information technology use in the logistic sector on company performance were examined by Tekin et al. (2005). A survey was given to companies operating in the logistic sector to reveal how much they benefit from information technology. As a result of the survey, it was considered necessary for companies to primarily make use of management information systems and fleet vehicle tracking satellite systems in the field of information technology. In light of the above-mentioned information; due to the aim of public institutions to make use of information systems just as much as companies, this study serves as reference in regard to the necessity of an effective vehicle tracking and management system. Another study is the e-government applications as part of the reorganization in public administration made by Balci and Kirilmaz (2009). In scope of the study, the priority evaluation of e-government objectives made by the State Planning Organization was set forth. In context of these objectives, it is seen that the planned vehicle tracking and management information system coincides with e-government target priorities such as the improvement of service quality, enhancing internal productivity, increasing transparency, paperwork elimination, improvement of the decision making process, increasing revenues. In light of all these studies; by using an efficient vehicle tracking and management system and utilizing information systems in public institutions, the enhancement of corporate performance is provided. Besides, the fact that no studies have been made on the subject of efficient vehicle tracking and management information systems in public institutions has encouraged us. Also having the study done in line with the strategic objectives determined by the institution employees, has made it used much more efficiently than the system that will be established by taking the individuality and package vehicle tracking systems.

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